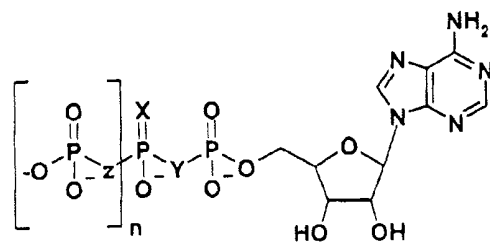


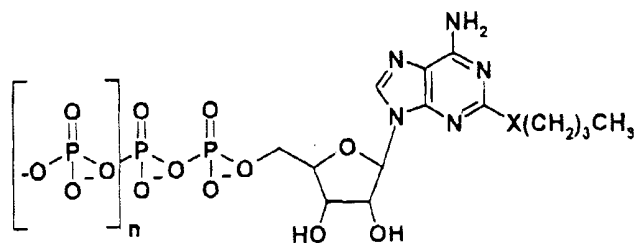
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1 a: X = S, Y = O, Z = O, n = 0

b: X = O, Y = CH<sub>2</sub>, Z = O, n = 1c: X = O, Y = O, Z = CH<sub>2</sub>, n = 1d: X = S, Y = CH<sub>2</sub>, Z = NH, n = 1

Fig. 1A



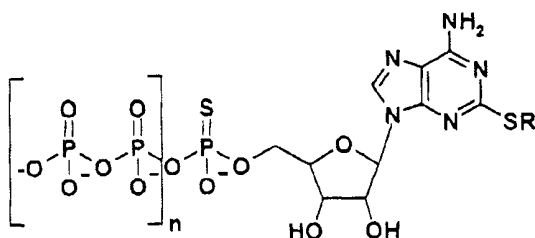
2 a: n = 1, X = S

b: n = 0, X = S

c: n = 1, X = NH

d: n = 1, X = O

Fig. 1B



3. n = 1, a: R = hexyl, b: R = benzyl

4. n = 0, a: R = hexyl, b: R = benzyl

Fig. 1C

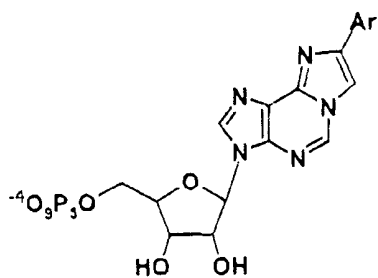
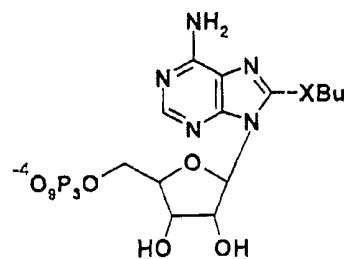
5 a: Ar = p-NO<sub>2</sub>-C<sub>6</sub>H<sub>4</sub>b: Ar = p-NH<sub>2</sub>-C<sub>6</sub>H<sub>4</sub>

Fig. 1D



6. X = S

7. X = NH

8. X = O

Fig. 1E

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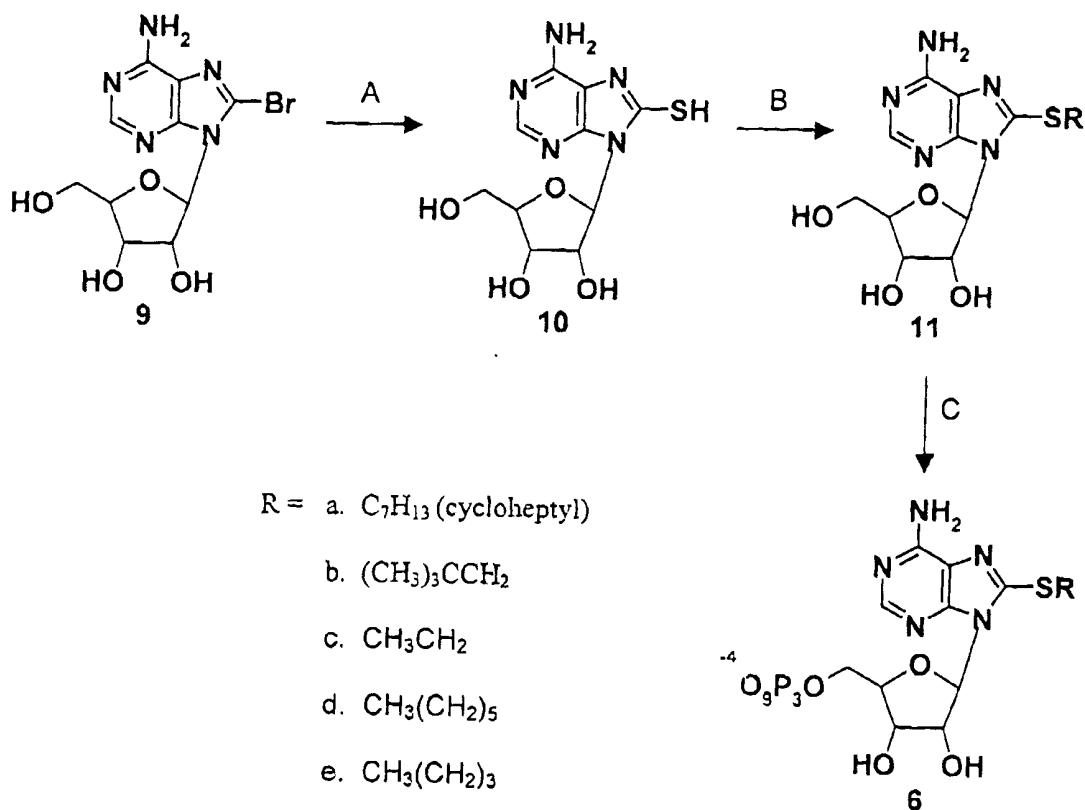


Fig. 2

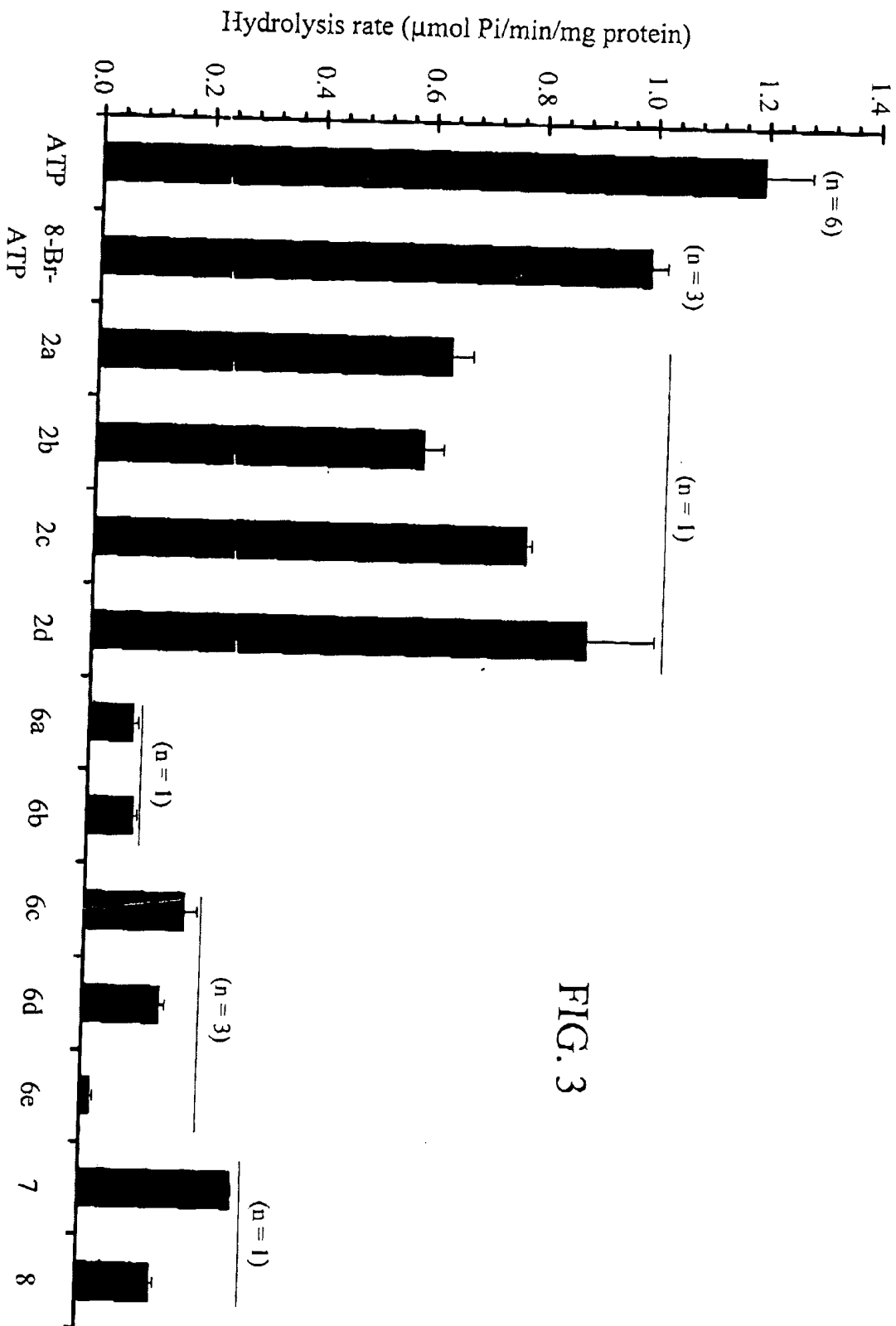


FIG. 3

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Substrates	$K_m$ ( $\mu M$ )	$V_{max}$ ( $\mu mol/min/mg$ protein)	Inhibitors	$K_i$ ( $\mu M$ )
ATP	$18 \pm 1$	$1.65 \pm 0.10$	8-cycloheptylS-ATP	$31 \pm 2.5$
ADP	$33 \pm 1$	$1.30 \pm 0.08$	8-CH <sub>2</sub> tBuS-ATP	$45 \pm 2.5$
2-BuS-ATP 2a	$36 \pm 6$	$0.83 \pm 0.05$	8-hexylS-ATP	$16 \pm 2.0$
2-BuS-ADP 2b	$63 \pm 14$	$0.94 \pm 0.10$	8-BuS-ATP	$10 \pm 2.0$
2-BuNH-ATP 2c	$32 \pm 8$	$0.99 \pm 0.10$		
2-BuO-ATP2d	$28 \pm 8$	$0.82 \pm 0.09$		
8-bromo-ATP	$22 \pm 5$	$0.63 \pm 0.04$		
8-cthylS-ATP 6c	$12 \pm 5$	$0.30 \pm 0.03$		
8-BuNH-ATP 7	$20 \pm 7$	$0.28 \pm 0.03$		
8-BuO-ATP 8	$26 \pm 5$	$0.20 \pm 0.01$		

FIG. 4

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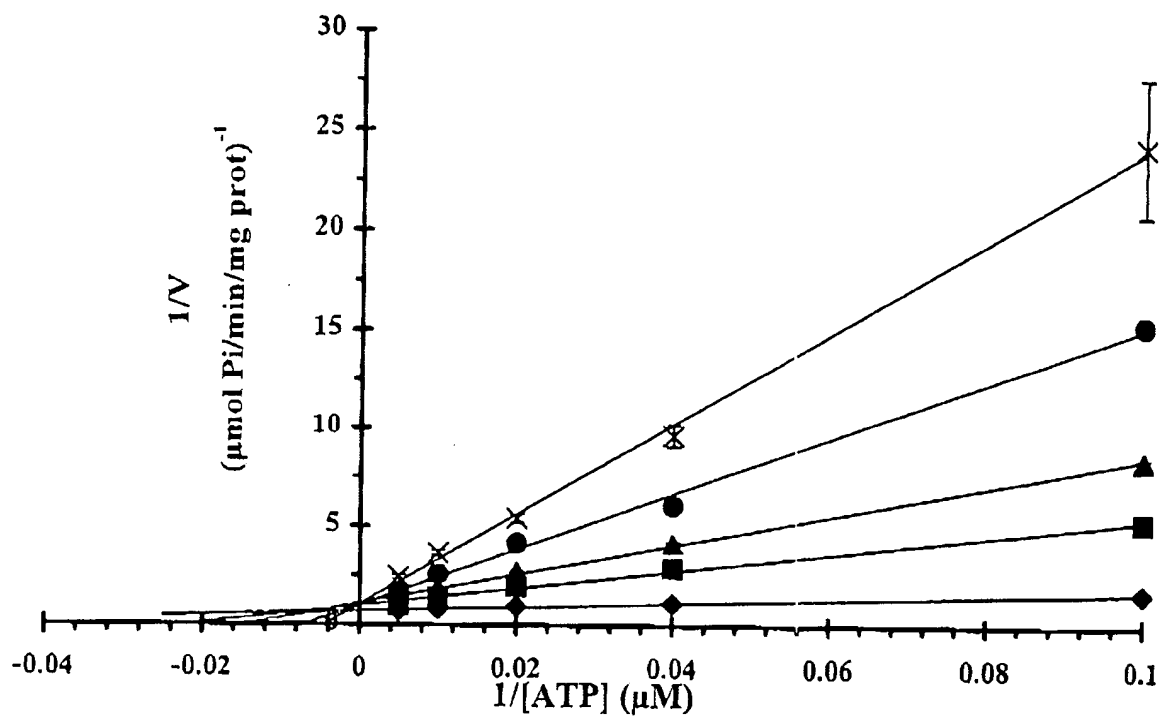


FIG. 5A

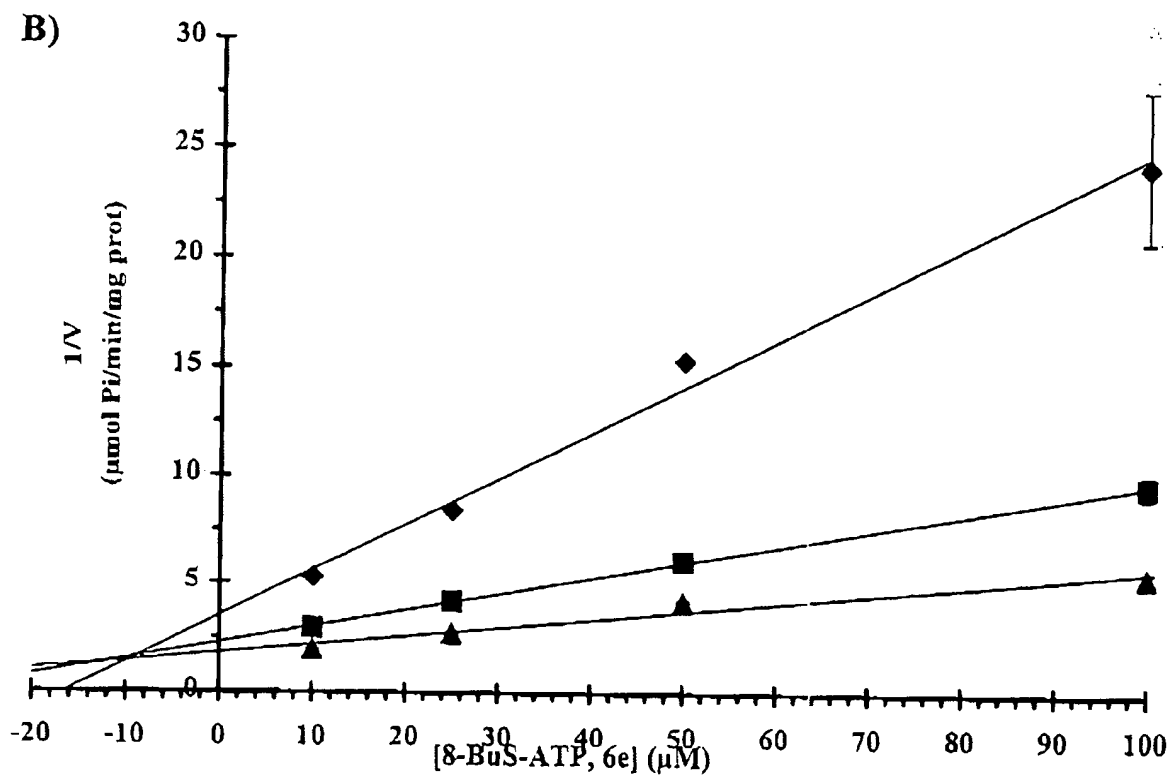


FIG. 5B

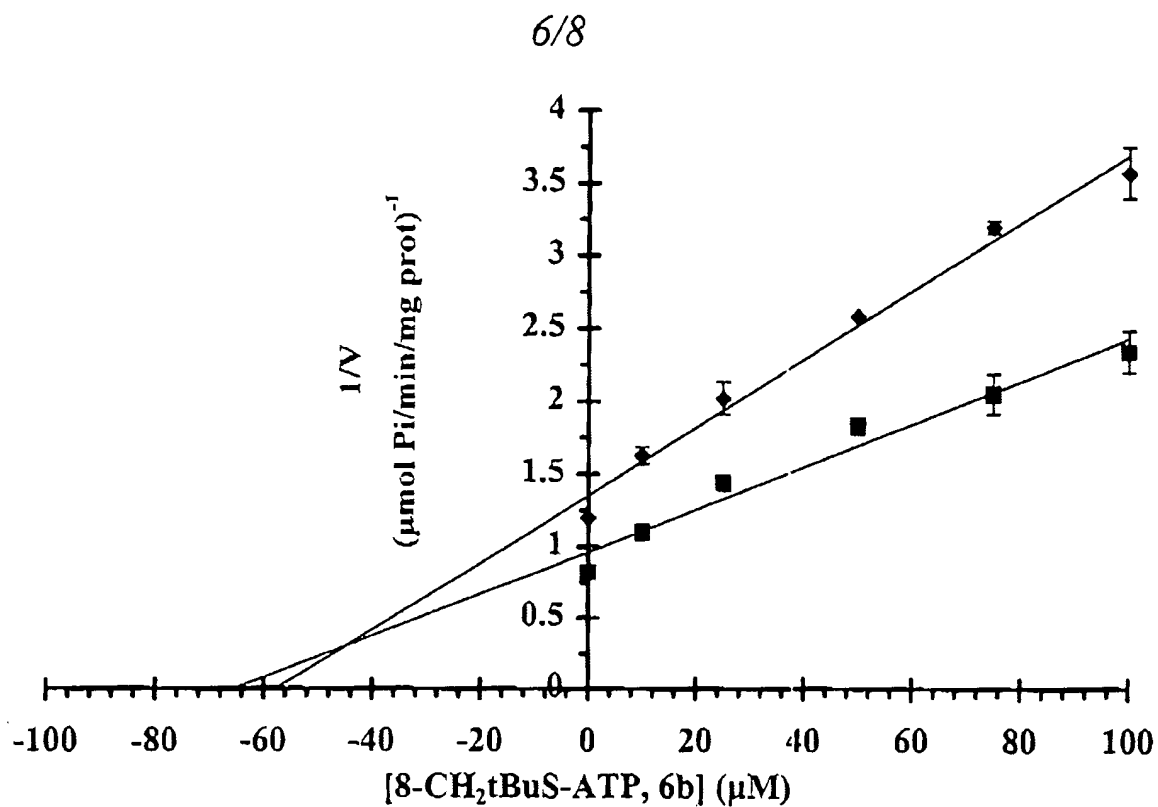


FIG. 6A

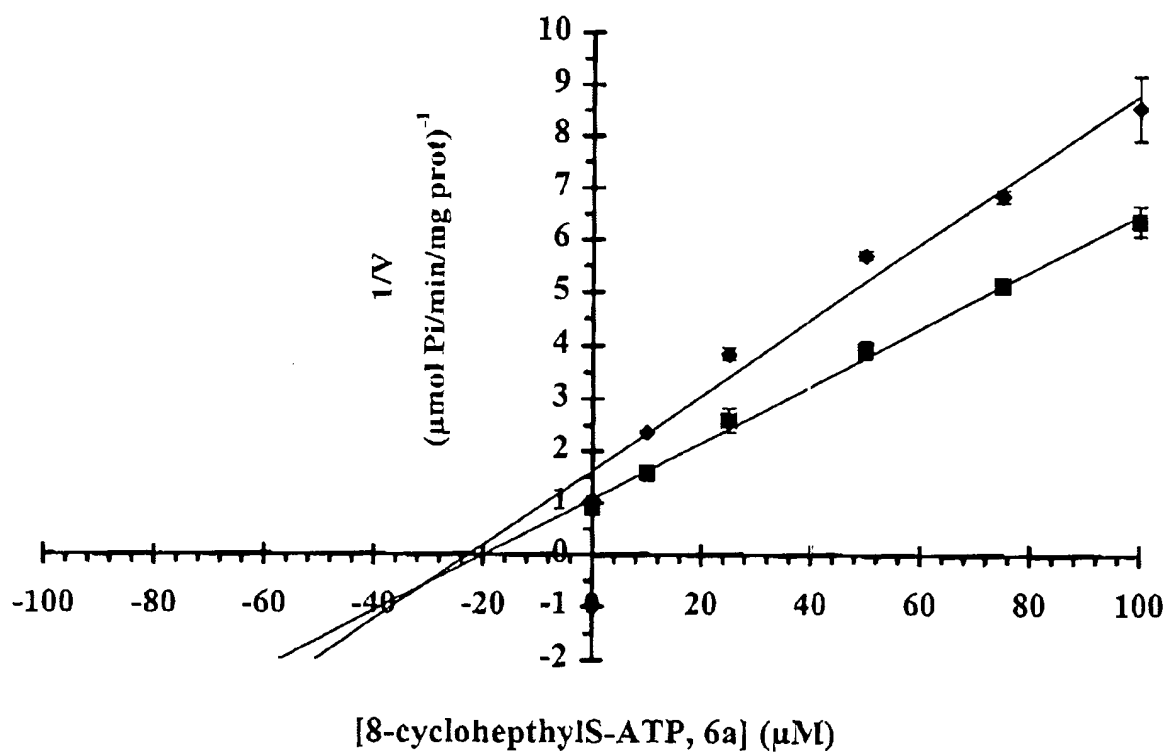


FIG. 6B

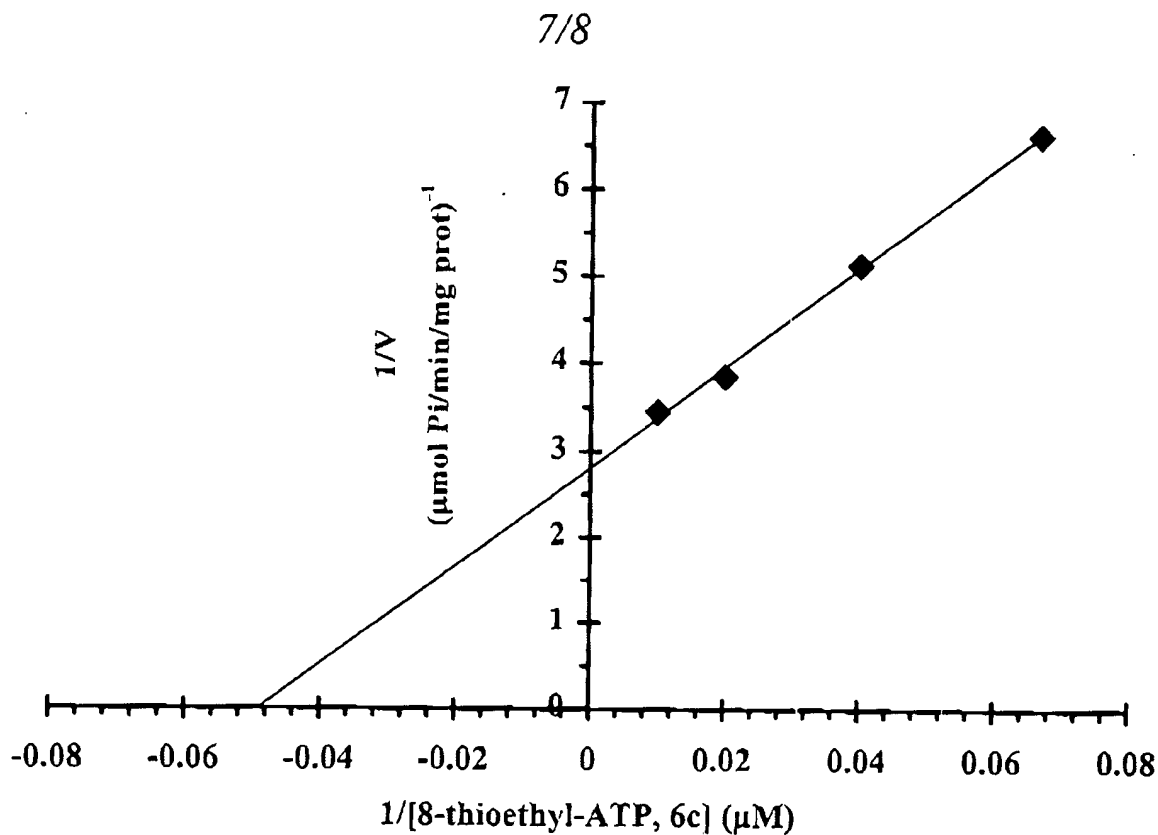


FIG. 7A

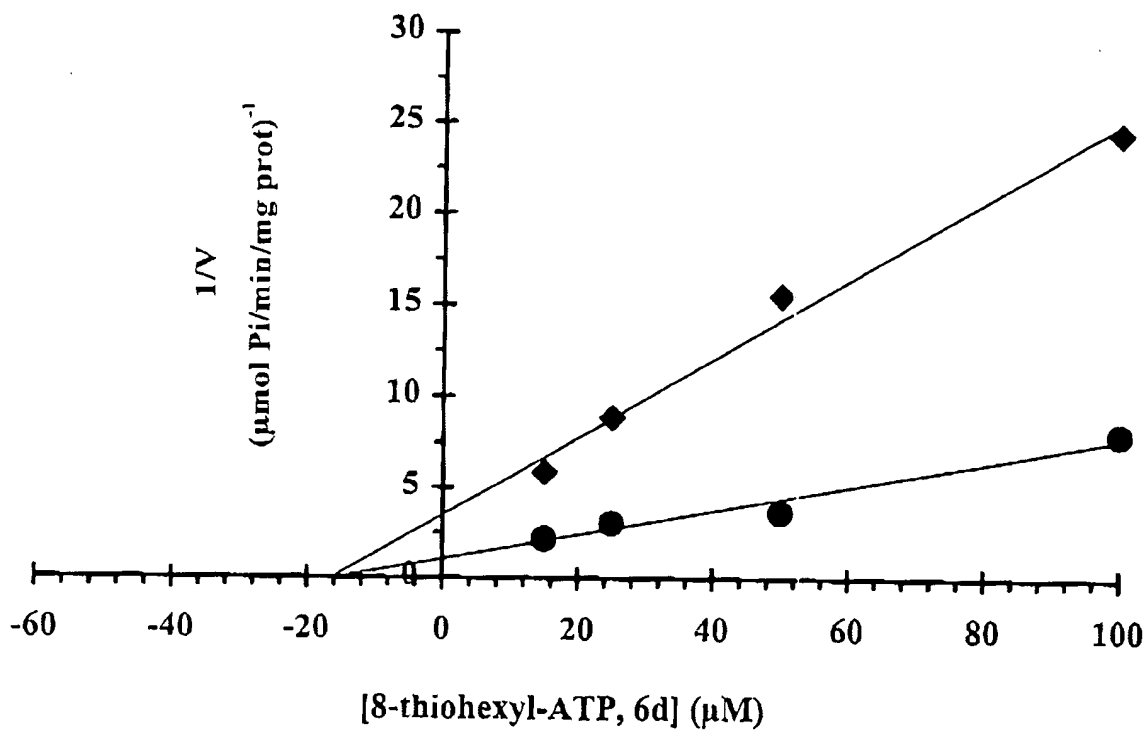


FIG. 7B

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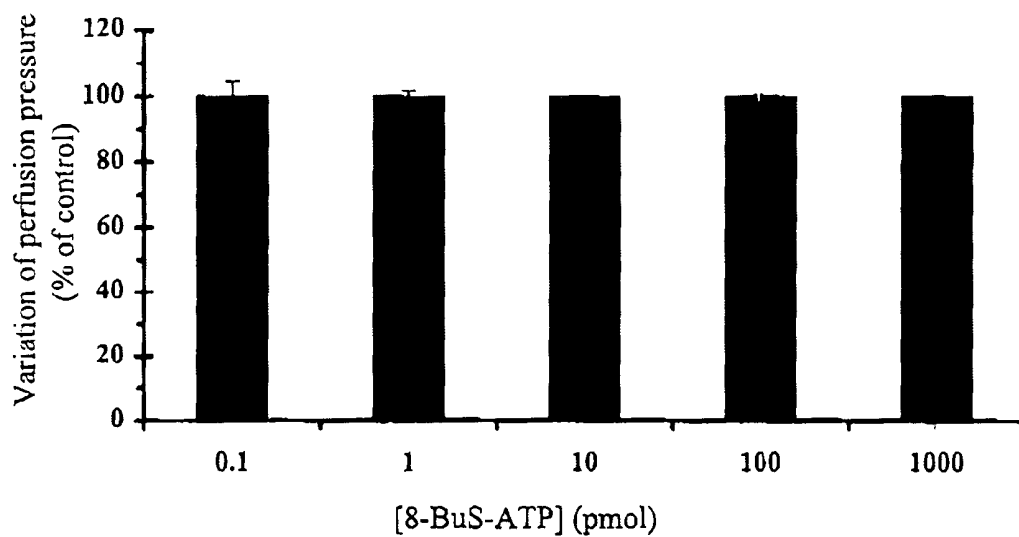


FIG. 8A

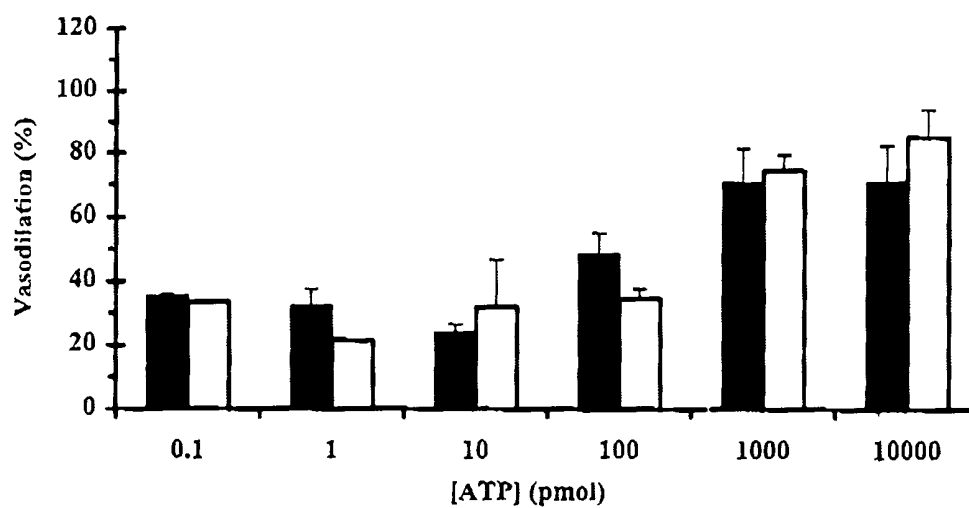


FIG. 8B

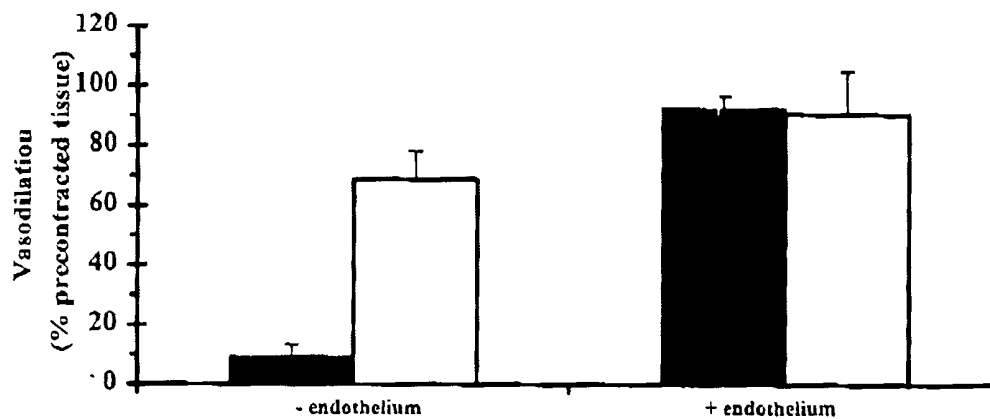


FIG. 8C